

REMARKS/ARGUMENTS

Claims 1-5, 7, 8, 10-17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Dormer et al. (U.S. 5,768,901). Claims 6 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dormer et al in view of Lifson et al (U.S. 6,058,729). Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dormer et al.

In response, the applicants have reviewed the cited references in detail and believe that the claims, as amended, are patentably distinctive thereover for the reasons to be discussed hereinbelow.

The present invention relates to a single stage compressor for a transport refrigeration system which operates primarily in a low capacity mode but at times, requires higher capacity performance. These needs are met by a single stage compressor with two sections, with one section being connected to the main system evaporator and the other section being connected to a subcooling evaporator. One or more unloading circuits are provided in the main section of the conventional system such that the compressor can be unloaded during periods of low capacity demand. An isolation valve and expansion device are in the subcooler unit so as to allow for control and isolation of the subcooler when not required. A multiple cylinder reciprocal compressor is provided with one or more cylinders being dedicated to use in the subcooler circuit while the other cylinders are dedicated to the main evaporator circuit.

The advantage of such a system is that it is adaptable to provide the very large operating range that is required in a transport refrigeration system. That is, while the temperature of the box may be within the range of 55°F to -20°F and the operating range may be from -40°F to +125°F, the present arrangement allows for one section to be used most of the time but the other section to be brought in when needed to meet these requirements. In doing so, however, the capacity of the system is reduced.

Each of the cited references relate to a two stage compressor with an economizer. Such a system is discussed in paragraph [0005] of the applicant's specification as being one of those which is relatively complex, expensive, and difficult to maintain. Whereas two stage compressor systems are common in commercial refrigeration, they are not generally used in transport refrigeration because they are not adaptable to operate in the environment as described hereinabove. In this regard, they would tend to provide either too much or too little capacity. For that reason, two stage compressors have not been found to be technically feasible in the transport refrigeration industry.

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In the Dormer reference, on which the Examiner relies for rejection for each of the claims, there are, in fact, two sections of the compressor (i.e. LS and HS) as indicated by the Examiner. However, this is a typical two stage compressor wherein the refrigerant passes first through one section and then through the other section connected in serial flow relationship, with only the latter section being connected to discharge to the discharge port. In contrast, the applicant's invention provides for a single stage compressor with first and second sections connected in parallel, with each having a suction inlet and both discharging to a single discharge port. As will be seen from the discussion above, this is substantially different from the arrangement of the cited references.

Because of these substantial differences which are now recited in each of the independent claims, the applicants believe that the claims are patentably distinctive over the cited references. A reconsideration of the Examiner's rejections and a passing of the case to issue is therefore respectfully requested.

If the Examiner wishes to expedite disposition of the above-captioned patent application, he is invited to contact Applicant's representative at the telephone number below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-0289.

Respectfully submitted,
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